

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**In the claims:**

Claim 1 (Cancelled): A modified anti-angiogenic peptide comprising a reactive group which reacts with amino groups, hydroxyl groups, or thiol groups on blood components to form stable covalent bonds wherein said reactive group is selected from the group consisting of succinimidyl and maleimido groups.

Claim 2 (Cancelled) The as modified peptide of claim 1 wherein said peptide is a kringle 5 peptide.

Claim 3 (Cancelled) A kringle 5 peptide according to claim 2 wherein said derivative is reactive with blood proteins.

Claim 4 (Cancelled) A kringle 5 peptide according to claim 3, wherein the derivative is reactive with a thiol group on a blood protein.

Claim 5 (Cancelled) A kringle 5 peptide according to claim 2 wherein the peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

Claim 6 (Cancelled) A kringle 5 peptide according to claim 2 wherein the peptide is selected from the group consisting of SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 7 (Cancelled) A composition comprising a derivative of kringle 5 peptide or analog thereof, said derivative comprising a reactive group which reacts with amino groups, hydroxyl groups or thiol groups on blood components to form stable covalent bonds wherein said reactive group is selected from the group consisting of succinimidyl and maleimido groups for use in a method of treating angiogenesis in a human.

Claim 8 (Cancelled) The composition of claim 7 wherein said derivative is reactive with blood proteins.

Claim 9 (Cancelled) The composition of claim 7 wherein said derivative is reactive with a thiol group on a blood protein.

Claim 10 (Cancelled) A derivative of a kringle 5 peptide, said derivative comprising a maleimido group which reacts with a thiol group on human serum albumin to form a covalent bond.

Claim 11 (Cancelled) The derivative of claim 10 wherein said peptide is selected from SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 and SEQ ID NO:9

Claim 12 (Cancelled) The derivative of claim 10 wherein said peptide is selected from SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 13 (Cancelled) A composition comprising a derivative of an anti-angiogenic peptide, said derivative comprising a maleimido group which reacts with a thiol group on human serum albumin to form a covalent bond for use in a method of treating angiogenesis in a human.

Claim 14 (Cancelled) The composition of claim 13 wherein the peptide is a kringle 5 peptide.

Claim 15 (Cancelled) The composition according to claim 14, wherein the peptide is selected from SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 and SEQ ID NO:9.

Claim 16 (Cancelled) A composition according to claim 14 wherein the peptide is selected from SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 17 (Cancelled) Use of a composition for the manufacturer of a medicament extending the *in vivo* half-life of a kringle 5 peptide in a patient to provide an anti-angiogenic effect, the composition comprising a derivative of a kringle 5 peptide or analog thereof, said derivative comprising a reactive group which reacts with amino groups, hydroxyl groups, or thiol groups on blood components to form stable covalent bonds, wherein the reactive group is selected from the group consisting of succinimidyl and maleimido groups.

Claim 18 (Cancelled) Use of a composition according to claim 14, wherein the derivative is reacted with blood proteins.

Claim 19 (Cancelled) A modified kringle 5 peptide selected from the group consisting of NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Lys-NH<sub>2</sub> (SEQ ID NO: 17); NAc-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 18) ; Nac-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 19); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 20); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Lys-NH<sub>2</sub> (SEQ ID NO: 21); NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 22); (MPA-AEEA)-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 23) and (MPA)-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 24).

Claim 20 (Cancelled) A modified kringle 5 peptide selected from the group consisting of: NAc-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 25); (MPA-AEEA)-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 26); (MPA)-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 27); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 28); (MPA-AEEA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 29); and (MPA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 30).

Claim 21 (Cancelled) A modified kringle 5 peptide selected from the group consisting of NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 31); (MPA-AEEA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-NH<sub>2</sub> (SEQ ID NO: 32); (MPA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-NH<sub>2</sub> (SEQ ID NO: 33); NAc-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 34); (MPA-AEEA)-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 35); (MPA)-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 36); NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 37); (MPA-AEEA)-Pro-Arg-Lys-Leu-Tyr-Asp-NH<sub>2</sub> (SEQ ID NO: 38); (MPA)-Pro-Arg-Lys-Leu-Tyr-Asp-NH<sub>2</sub> (SEQ ID NO: 39); NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-AEEA-MPA)-NH<sub>2</sub> (SEQ ID NO: 40); and NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-AEEA<sub>n</sub>-MPA)-NH<sub>2</sub> (SEQ ID NO: 41).

Claim 22 (New): A method for providing an anti-angiogenic effect to a patient, comprising administering to the patient a modified anti-angiogenic peptide comprising a peptide corresponding to a region of mammalian plasminogen, and a reactive group coupled thereto, said reactive group reacting with amino group, hydroxyl group, or thiol group on blood component to form stable covalent bond, wherein said reactive group is selected from the group consisting of succinimidyl and maleimido groups.

Claim 23 (New): The method of claim 22, wherein said peptide is a kringle 5 peptide.

Claim 24 (New): The method of claim 22, wherein said blood component is a blood protein.

Claim 25 (New): The method of claim 22, wherein said modified peptide is reactive with a thiol group on a blood protein.

Claim 26 (New): The method of claim 22, wherein said peptide is a peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

Claim 27 (New): The method of claim 22, wherein said peptide is a peptide selected from the group consisting of SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 28 (New): A method for providing an anti-angiogenic effect to a patient, comprising administering to the patient a modified kringle 5 peptide comprising a kringle 5 peptide and a maleimido group coupled thereto, said maleimido group reacting with a thiol group on human serum albumin to form a stable covalent bond.

Claim 29 (New): The method of claim 28, wherein said kringle 5 peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

Claim 30 (New): The method of claim 28, wherein said kringle 5 peptide is selected from the group consisting of SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 31 (New) A method for providing an anti-angiogenic effect to a patient, comprising administering to the patient a modified kringle 5 peptide selected from the group consisting of NAc-

Pro-Arg-Lys-Leu-Tyr-Asp-Lys-NH<sub>2</sub> (SEQ ID NO: 17); NAc-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 18); Nac-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 19); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-NH<sub>2</sub> (SEQ ID NO: 20); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Lys-NH<sub>2</sub> (SEQ ID NO: 21); NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 22); (MPA-AEEA)-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 23) and (MPA)-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 24).

Claim 32 (New) A method for providing an anti-angiogenic effect to a patient, comprising administering to the patient a modified kringle 5 peptide selected from the group consisting of NAc-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 25); (MPA-AEEA)-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 26); (MPA)-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 27); NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 28); (MPA-AEEA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 29); and (MPA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Ala-Tyr-Thr-Thr-Asn-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 30).

Claim 33 (New) A method for providing an anti-angiogenic effect to a patient, comprising administering to the patient a modified kringle 5 peptide selected from the group consisting of NAc-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 31); (MPA-AEEA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-NH<sub>2</sub> (SEQ ID NO: 32); (MPA)-Arg-Asn-Pro-Asp-Gly-Asp-Val-Gly-Gly-Pro-Trp-NH<sub>2</sub> (SEQ ID NO: 33); NAc-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 34); (MPA-AEEA)-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 35); (MPA)-Arg-Lys-Leu-Tyr-Asp-Tyr-NH<sub>2</sub> (SEQ ID NO: 36); NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Lys-(Nε-MPA)-NH<sub>2</sub> (SEQ ID NO: 37); (MPA-AEEA)-Pro-Arg-Lys-Leu-Tyr-Asp-NH<sub>2</sub> (SEQ ID NO: 38); (MPA)-Pro-Arg-Lys-Leu-Tyr-Asp-NH<sub>2</sub> (SEQ ID NO: 39); NAc-Pro-Arg-Lys-Leu-

Tyr-Asp-Tyr-Lys-(Nε-AEEA-MPA)-NH<sub>2</sub> (SEQ ID NO: 40); and NAc-Pro-Arg-Lys-Leu-Tyr-Asp-Tyr-Lys-(Nε-AEEA<sub>n</sub>-MPA)-NH<sub>2</sub> (SEQ ID NO: 41).

Claim 34 (New) A method of using a modified kringle 5 peptide comprising a kringle 5 peptide and maleimido group coupled thereto which reacts with a thiol group on a blood protein to form a covalent bond, for manufacturing an anti-angiogenic medicament having an extended *in vivo* half-life compared to said kringle 5 peptide.

Claim 35 (New) A conjugate of formula:  
blood component-reactive group-peptide,  
wherein said peptide is an anti-angiogenic peptide corresponding to a region of mammalian plasminogen, and wherein said reactive group is bonded to an amino group, a hydroxyl group, or a thiol group of said blood component by means of stable covalent bond, said reactive group being selected from the group consisting of succinimidyl and maleimido groups.

Claim 36 (New) The conjugate of claim 35, wherein said blood component is a blood protein.

Claim 37 (New) The conjugate of claim 36, wherein said peptide is a kringle 5 peptide.

Claim 38 (New): The conjugate of claim 36, wherein said reactive group is covalently bonded to a thiol group on said blood protein.

Claim 39 (New): The conjugate of claim 36, wherein said peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

Claim 40 (New): The conjugate of claim 36, wherein said peptide is selected from the group consisting of SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16.

Claim 41 (New): The conjugate of claim 36, wherein said blood protein is serum albumin.

Claim 42 (New): A composition for providing an antiangiogenic effect to a patient, comprising a conjugate of claim 35 in association with a pharmaceutically acceptable carrier.

Claim 43( New): The composition of claim 42, wherein said blood component is a blood protein.

Claim 44 (New): The composition of claim 42, wherein said peptide is a kringle 5 peptide.

Claim 45 (New): The composition of claim 42, wherein said reactive group is covalently bonded to a thiol group on said blood protein.

Claim 46 (New): The composition of claim 42, wherein said peptide is selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

Claim 47 (New): The composition of claim 42, wherein said peptide is selected from the group consisting of SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, and SEQ ID NO:16.

Claim 48 (New): The composition of claim 42, wherein said blood protein is serum albumin.